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May 10, 2002

BY HAND

Marlene H. Dortch
Acting Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: **Comments of Inmarsat Ventures plc**
In the Matter of Procedures to Govern the Use of Satellite Earth Stations on Board Vessels in Bands Shared with Terrestrial Fixed Service
IB Docket No. 02-10

Dear Ms. Dortch:

Inmarsat Ventures plc ("Inmarsat"), by its counsel, hereby submits the enclosed Comments, in the above-referenced docket.

Sincerely,

Alexander D. Hoehn-Saric

Enclosure

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Before the
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
Procedures to Govern the Use of Satellite Earth Stations on Board Vessels in Bands Shared With Terrestrial Fixed Service	)	IB Docket No. 02-10

Comments of Inmarsat Ventures plc

Inmarsat Ventures plc ("Inmarsat") hereby provides the following Comments in response to the Notice of Inquiry in which the Commission seeks input on a variety of issues related to the authorization of satellite earth stations on board vessels ("ESVs").[1] Inmarsat has an interest in this proceeding as the parent corporation of Invsat Ltd ("Invsat"), a company specializing in providing integrated communications networks and systems over very small aperature terminals ("VSATs") that operate in both the C band and the Ku band, which are allocated for the Fixed Satellite Service ("FSS"). In particular, Invsat has partnered with a manufacturer who has developed small, lightweight VSATs that are highly transportable and are well-suited for maritime uses, such as serving offshore oil platforms, cruise ships and ferries. Invsat uses ESVs to provide critical voice and broadband connections to ships and oil platforms and thereby connect them with the rest of the world.

Inmarsat applauds the Commission's attempt to develop an appropriate licensing mechanism that responds to the growing role of ESVs, and that recognizes the importance of ESVs in meeting the needs of maritime users that cannot be met by Mobile Satellite Service

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1 *See In the Matter of Procedures to Govern the Use of Satellite Earth Stations on Board Vessels in the Bands Shared with Terrestrial Fixed Service, Notice of Inquiry*, IB Docket No. 02-10, FCC 02-18 (rel. Feb. 4, 2002) (the "Notice of Inquiry").

("MSS") frequency band services. To this end, Inmarsat urges the Commission to take into consideration the following issues as it develops a regulatory framework for ESVs.

I. ESV Services Fulfill An Important Maritime Need

Consumers use Invsat's service for a variety of personal and business services including voice, fax, data transfer, access to the Internet, corporate LAN and WAN links, video conferencing and telemedicine. Thus, Invsat's service fills an otherwise unmet need of the maritime industry and provides an important supplement to the "traditional" MSS services provided by Inmarsat at L-band. Inmarsat's L-band MSS service offerings provide essential safety, weather, navigation, and messaging services to ships, planes and land mobile users around the world. But the additional service offerings are constrained by bandwidth limitations of the MSS frequency bands. In order to meet the high-data-rate needs of ships, Invsat has developed a proprietary stablization systems that enables Invsat VSATs to remain fixed on a satellite despite the pitch and roll of the sea. Thus, Invsat's VSAT service is able to use large segments of FSS-allocated C and Ku band spectrum that traditionally has been used primarily by land-based earth terminals.

Invsat's ESV service satifies the needs of ship owners where no other service will do. As a satellite based system, it offers telecommunications access where no terrestrial based system can operate. Cellular and PCS systems lack the range necessary to serve ships traveling between ports and are useless in any oceanic voyage. Using Invsat services, mariners are able to communicate with each other on the high seas and remain in contact with their headquarters. Individual crew members or passengers can use the system to make personal calls and receive streaming video pictures of their families or participate in video conferences. As ships approach a coast, they can use ESVs to call port authorities or suppliers on shore and arrange for their

arrival. ESV offers a mobile form of high-speed communications that operates as easily while moving between coastal ports as it does while crossing the ocean to foreign destinations.

Invsat's ESV service has a higher capacity per terminal than the current generation of Inmarsat's L band mobile satellite services. Thus, the ESV service is able to provide faster data communications, which is especially important for ships needing to upload and download large amounts of data or use other broadband services. For example, research ships conducting seismic surveys need the ability to transmit large amounts of collected data in a fast and efficient manner and many use Invsat's system to do just that. Other uses include the operation of corporate LANs on ferries and, in the future, to connect to GSM base stations on board cruise ships and other vessels. Invsat operations complement Inmarsat's other offerings and enable operators of ships to maintain vital communications.

With regard to U.S. registered vessels, Invsat anticipates that it will serve both ships that will travel along the U.S. coast lines and transoceanic vessels. Whether inside or outside U.S. waters, ships using Invsat's service will use the same ESVs. Thus, in order to faciliate the deployment of this essential service, the Commision should seek to develop technical licensing parameters that are, to the maximum extent practicable, consistent with those that are being developed at the ITU. An ITU decision on the technical limits on ESVs will be made at WRC-2003.

II. Frequency bands for ESV operation

ITU-R WP 4-9S has agreed to a new Recommendation which identifies the bands 5925 – 6425 MHz and 14 – 14.5 GHz as suitable for ESV uplink operation. These bands are suitable for ESV for many of the reasons mentioned in the Notice of Inquiry. Inmarsat proposes that the Commission make provision for ESVs in both these bands. Such action will facilitate the global operation of ESVs.

The Commission also seeks comments on whether MSS bands would be suitable for ESV operation. The amount of spectrum available in MSS bands below 3 GHz is extremely limited. Therefore, as noted above, it is not feasible to accommodate the high bandwidth requirements of ESVs in these bands. Furthermore, to a large extent ESVs make use of FSS technology and are designed to operate with frequencies used by FSS satellites.

III. Dual-band Operations Would Be Costly And Inefficient

In order to provide services at higher data rates, Invsat needs to operate in both the Ku and C fixed satellite bands. As the Commission has noted, the typically large areas covered by C band satellite beams allows near global coverage for ship board ESVs, but as ships move closer to shore, potential interference problems arise in those areas where the C band is used terrestrially.[2] Invsat ESVs operating in the Ku band have far fewer potential interference issues near shore because of the limited terrestrial use of the FSS parts of the Ku band, but are subject to a number of significant limitations, including the fact that Ku band satellite antenna beams are typically smaller and do not cover the oceans and the fact the part of the Ku band designated for FSS use in Region 2 (the Americas) is used for BSS service in the rest of the

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2 *See Notice of Inquiry* at ¶ 18.

world (and vice versa). For these reasons, Invsat has developed Ku and C band products to address the separate needs of its various customers.

The Commission has requested comment on dual-band operations. While theoretically possible, actually deploying dual-band ESVs does not appear to be commercially feasible. First, it would significantly increase the cost of service because it would require the lease of redundant (both C and Ku band) satellite capacity in areas near the shore. Second, it would require the time and expense involved with developing new, dual-band VSATs that would cost significantly more than a single-band solution.

IV. Coordination of ESV Services

The Commission has also requested comment on the coordination of ESVs with terrestrial FS systems. As discussed above, ESVs are designed to operate both in coastal waters and on the open sea. Because of the vital communications link that ESVs provide at sea, Invsat recommends that the Commission designate ESVs as a primary user within the current FSS allocation. As the Commission is well aware, it is very difficult to broadly deploy a service that is permitted to operate only on a secondary, non-interference basis, and with which no primary user has any obligation to coordinate.

As an initial matter, based on ITU studies to date, Inmarsat recommends that ESVs not be subject to any coordination requirement when used more than a given distance off-shore. Off-shore distances of 300 km at C-band and 125 km at Ku-band have been agreed at the recent meeting ITU-R WP4-9S and adopted by the ITU-R Joint Study Groups 4 and 9, based on contributions from many administrations. Inmarsat believes that these distances are sufficient to avoid potential interference into terrestrial or other operations in the C and Ku bands. These distances are based on the characteristics of FS systems in many different countries. Therefore,

the Commission should consider applying smaller distances to the U.S. coastline, based on the particular characteristics of FS stations operating in U.S. and previous experience of ESV operation. Thus, the 200 km distance discussed in the Notice of Inquiry at paragraph 26 may be more appropriate in this country. Finally, in the parts of the 14-14.5 GHz band where no terrestrial services are in operation, there would be no need for any off-shore distance to be applied.

Inmarsat notes that the technical limits for ESVs being considered in ITU are necessary only to ensure that the off-shore distance remains valid, and are not necessary when operating within the distance.

In coastal waters (within the off-shore distance), authorizing ESVs to operate on a co-primary basis with terrestrial FS operators will encourage coordination efforts without resulting in harm to the operators of terrestrial systems.

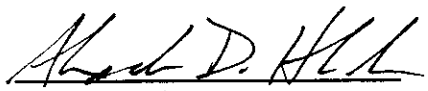
V. Treatment of foreign registered vessels

Inmarsat encourages the Commission to treat ESVs on foreign registered vessels in the same way as ESVs on U.S. registered vessels, insofar as the permissible frequencies for ESV use and coordination with FS systems are concerned. This will facilitate the use of ESVs and the ability of foreign and domestic vessels traveling to and from the U.S. to maintain vital communications.

VI. Conclusion

ESVs provide important communications services to coastal and ocean-bound vessels and in many cases are the only means of high-speed service on board a ship. Inmarsat therefore urges the Commission to formulate a framework that allows ESVs to operate on a co-primary basis with terrestrial FS services, but not to mandate dual-band (C and Ku band) ESV capabilities.

Respectfully submitted,



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